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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/643,033

08/18/2003

Thomas J. Tartamella

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EXAMINER

FISCHMANN, BRYAN R

ART UNIT

PAPER NUMBER

3618

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/643,033	Applicant(s) TARTAMELLA ET AL.	
	Examiner Bryan Fischmann	Art Unit 3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>08-18-2003</u> . | 6) <input type="checkbox"/> Other: _____ |

Drawings

1. Figure 1 is objected to due to the following:

Reference number 17 has been defined by the specification as "signal connection" and appears more than once on Figure 1. However, reference number 17 located toward the lower portion of Figure 1 appears to be associated with a valve on a water line, which is inconsistent with the above definition for reference number 17.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "plurality of batteries" implied by lines 1 and 2 of claims 1 and 7 and the second controller as recited in claims 3, 4, 9 and 10 must be shown or the feature canceled from the claims. No new matter should be entered.

See also the last line of claims 1, 2 and 8 and lines 7-11 of claim 7 regarding the "plurality of batteries".

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character not mentioned in the description:
12.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be

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labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 1-11 are objected to because of the following:

A) Claim 1 recites "A fuel cell hybrid vehicle utilizing flooded aqueous battery or batteries operatively coupled to a fuel cell stack...".

To improve wording, it is believed that the word "a" should appear before the word "flooded".

As an alternative, Applicant might consider changing the above wording to "one or more flooded aqueous batteries", although this is not supported by the drawings, as noted in the "Drawing" portion of this Office Action.

See also the last line of claims 1, 2 and 8 and lines 1, 2 and 7-11 of claim 7 regarding the "plurality of batteries".

B) The preamble of claim 1, as well as the remainder of the claims recites "a fuel cell hybrid vehicle". While perhaps not strictly objectionable, the term "hybrid" in the above recitation is not considered to be a "preferred term", as the term "hybrid" in conjunction with a vehicle is generally understood to mean a hybrid drive vehicle that is powered by both an engine and electrical motor, such as the Toyota Prius. It is not believed that the Applicant's vehicle is powered by both an engine and electrical motor.

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C) Claim 7 recites on lines 9 and 10 "...a system controller...to periodically pump water...".

This recited phrase is objected to, as it implies that the controller, instead of the pump, is "physically" pumping the water.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 3, 4, 9 and 10 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicants regard as their invention.

A) Claim 3 recites "...a second controller...". It is considered unclear what structure comprises the "second controller" since this term does not correspond to nomenclature used in the specification, particularly nomenclature associated with a reference number and related to structure on the drawing figures.

Note that Section 608.01 (o) and 2173.05(a) of the MPEP requires that nomenclature used in the claims be apparent from the specification, unless it is apparent from the prior art.

Note that Section 608.01(g) of the MPEP also recites "The description is a dictionary for the claims and should provide clear antecedent basis for all terms used in the claims".

B) Claim 10 recites the limitation "said second controller". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee, US Patent 6,847,127, in view of Suzuki, US Patent 6,727,011.

Lee teaches a fuel cell hybrid vehicle with a battery (20), an electric drive motor (50) and a system controller (500).

Lee fails to teach an integrated watering system for an aqueous battery.

However, Suzuki teaches a fuel cell system utilizing a flooded aqueous battery operatively coupled to a fuel cell stack, and an integrated watering system, said integrated watering system comprising:

a heat exchanger (600) configured to extract water from exhaust air from said fuel cell stack;

a reservoir (703) operatively connected to store said water;

a sensor (214) operatively connected to generate a signal based on said flooded aqueous batteries electrolyte level; and

a pump (705) operatively connected to said reservoir and said flooded aqueous battery.

An aqueous watering system for a fuel cell battery is advantageous in that the battery always remains properly watered, facilitating battery life and longevity.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize an aqueous battery with an aqueous watering system in the fuel cell vehicle of Lee, as taught by Suzuki.

Regarding claim 5, see lines 41 and 42 of column 6 of Suzuki.

9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee, US Patent 6,847,127 and Suzuki, US Patent 6,727,011, as applied to claim 1, and further in view of Melichar, US Patent 5,453,334.

The combination fuel cell vehicle of Lee fails to teach a deionizer.

However, Melichar teaches an automatic battery watering system including a deionizer (22). A deionizer is advantageous in that unwanted ions are removed from water before entering a battery.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a deionizer in the combination fuel cell vehicle of Lee, as taught by Melichar.

Regarding the claim 2 recitation "operatively connected between said reservoir and said flooded...batteries", note that per Section 2144 of the MPEP, that it is considered within the skill level of one of ordinary skill in the art to rearrange, or relocate parts. Locating the deionizer between the reservoir and the battery is advantageous in that any ions that are in the reservoir will be eliminated before entering the battery.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee, US Patent 6,847,127 and Suzuki, US Patent 6,727,011, as applied to claim 1, and further in view of Japanese Patent JP 4-306557.

The combination fuel cell vehicle of Lee fails to teach an overflow reservoir operatively connected to receive overflow from said flooded aqueous battery.

However, it is a generally recognized principle to provide an overflow reservoir to a tank, or other structure containing liquids than enter and leave. Vehicle radiators, for example, on newer vehicles generally have an overflow reservoir to store excess coolant. JP 4-306557, for example, teaches a battery watering system comprising a reservoir (41) and an overflow reservoir (5). An overflow reservoir is advantageous in that excess fluid in a reservoir will not "spill-out", potentially wasting fluid and possibly endangering personnel or adjacent structure, if the fluid is hazardous, or simply creating "a mess".

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize an overflow reservoir in the aqueous watering system in the combination fuel cell vehicle of Lee, as taught by JP 4-306557.

11. Claims 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee, US Patent 6,847,127, in view of Suzuki, US Patent 6,727,011 and Japanese Patent JP 4-306557.

Lee teaches a fuel cell hybrid vehicle with a battery (20), an electric drive motor (50) and a system controller (500).

Lee fails to teach an integrated watering system for an aqueous battery.

However, Suzuki teaches a fuel cell system utilizing a flooded aqueous battery operatively coupled to a fuel cell stack, and an integrated watering system, said integrated watering system comprising:

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a heat exchanger (600) configured to extract water from exhaust air from said fuel cell stack;

a reservoir (703) operatively connected to store said water;

a sensor (214) operatively connected to generate a signal based on said flooded aqueous batteries electrolyte level; and

a pump (705) operatively connected to said reservoir and said flooded aqueous battery.

An aqueous watering system for a fuel cell battery is advantageous in that the battery always remains properly watered, facilitating battery life and longevity.

Suzuki fails to teach an overflow reservoir operatively connected to receive overflow from said flooded aqueous battery.

However, it is a generally recognized principle to provide an overflow reservoir to a tank, or other structure containing liquids than enter and leave. Vehicle radiators, for example, on newer vehicles generally have an overflow reservoir to store excess coolant. JP 4-306557, for example, teaches a battery watering system comprising a reservoir (41) and an overflow reservoir (5). An overflow reservoir is advantageous in that excess fluid in a reservoir will not "spill-out", potentially wasting fluid and possibly endangering personnel or adjacent structure, if the fluid is hazardous, or simply creating "a mess".

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize an aqueous battery with an aqueous watering system in the fuel cell vehicle of Lee, as taught by Suzuki. It would have been

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additionally obvious to one of ordinary skill in the art at the time the invention was made to utilize an overflow reservoir in the aqueous watering system in the combination fuel cell vehicle of Lee, as taught by JP 4-306557.

Regarding claim 11, see lines 41 and 42 of column 6 of Suzuki.

12. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee, US Patent 6,847,127, Suzuki, US Patent 6,727,011 and Japanese Patent JP 4-306557, as applied to claim 7, and further in view of Melichar, US Patent 5,453,334.

The combination fuel cell vehicle of Lee fails to teach a deionizer.

However, Melichar teaches an automatic battery watering system including a deionizer (22). A deionizer is advantageous in that unwanted ions are removed from water before entering a battery.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a deionizer in the combination fuel cell vehicle of Lee, as taught by Melichar.

Regarding the claim 8 recitation "operatively connected between said reservoir and said flooded...batteries", note that per Section 2144 of the MPEP, that it is considered within the skill level of one of ordinary skill in the art to rearrange, or relocate parts. Locating the deionizer between the reservoir and the battery is advantageous in that any ions that are in the reservoir will be eliminated before entering the battery.

Allowable Subject Matter

13. Claims 3, 4, 9 and 10 would be allowable if rewritten to overcome the rejections under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A) Rosenfeld, et al and Chernoff, et al – teach vehicles powered by fuel cells

B) Menger and Jones – teach automatic battery watering systems

15. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Bryan Fischmann whose telephone number is (571) 272-6694. The examiner can normally be reached on Monday through Friday from 8:30 to 5:00.

If attempts to reach the Examiner by telephone are unsuccessful, the examiner's supervisor, Chris Ellis, can be reached on (571) 272-6914. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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BRYAN FISCHMANN
PRIMARY EXAMINER